

What is claimed is:

1. A steering unit for a camera dolly, comprising:
- 5 a steering transmission ;
- a differential;
- sprockets on the steering transmission, and on the differential; and
- chains at least indirectly connecting the steering transmission to the differential, the
- sprockets and chains forming a conventional steering system, a crab steering system, and a round
- 10 steering system.
- 2 The steering unit of claim 1 wherein the differential comprises a top sprocket, a
- center sprocket, and a bottom sprocket, with the top sprocket axially displaceable from the
- center sprocket and the bottom sprocket, to provide corrective and round steering,
- 15 3. The steering unit of claim 1 wherein the steering transmission comprises a first
- transmission spaced apart from a second transmission, and with the differential connected to the
- first transmission by a differential/first transmission chain and the differential connected to the
- second transmission by a differential/second transmission chain.
- 20 4. The steering unit of claim 1 further comprising a first distributor connected to the
- first transmission by a first distributor/transmission chain, and a second distributor connected to
- the second transmission by a second distributor/transmission chain.

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5. The steering unit of claim 1 further comprising a steering mode shift handle linked to the steering transmission, and, means for shifting between corrective, crab, and round steering systems while the operator's hands remain continuously on the shift handle.

5 6. The steering unit of claim 5 further comprising a pivotable links block having a first link connecting to the differential and having a plurality of idler links connecting to active idlers engaging chains extending around sprockets on the differential.

10 7. The steering unit of claim 1 further comprising an over-center linkage attached to the links block and to a steering mode shift handle.

15 8. The steering unit of claim 3 wherein the sprockets on the first and second transmissions are stacked up vertically and within each transmission have a single axis of rotation.

9. The camera dolly of claim 2 further comprising means for automatically and simultaneously adjusting tension on the chains connecting to the top and center sprockets of the differential, when the steering unit is shifted between steering modes.

20 10. The camera dolly of claim 2 further comprising:  
a steering unit housing supporting the differential and steering transmissions;  
a links block pivotably supported on the steering unit housing; and

a first link pivotably attached to the links block and to the top sprocket of the differential.

11. The steering unit of claim 10 further comprising second, third, fourth, and fifth links pivotably attached to the links block and to first, second, third, and fourth active idler sprockets, with the first and second active idler sprockets engaging the chain connecting to the top sprocket on the differential and the third and fourth active idler sprockets engaging the chain connecting to the middle differential sprocket.

12. The steering unit of claim 1 wherein the steering transmission and the differential are supported between top and bottom steering unit plates separate from the dolly, so that the steering unit can be removed from the dolly as a unit.

13. The steering unit of claim 5 further comprising a mechanical linkage from the shift handle to the transmission and differential.

14. A steering system for a camera dolly comprising:  
a rear transmission having first, second, third, and fourth sprockets supported on a first axle;  
a front transmission having a first, second and third sprockets supported on a shift rod;  
a differential having a top, center and bottom sprockets axially displaceable from each other;

a rear transmission distributor and a front transmission distributor, each having top, center and bottom sprockets;

a first chain connecting the top sprocket of the rear transmission to the top sprocket of the rear transmission distributor;

5 a second chain connecting the second sprocket of the rear transmission to the center sprocket of the differential;

a third chain connecting the third sprocket on the rear transmission to the center sprocket on the rear transmission distributor;

10 a fourth chain connecting the fourth sprocket on the rear transmission to a lower axle sprocket on an axle;

a fifth chain connecting the top sprocket of the differential to an upper axle sprocket on the axle;

a sixth chain connecting the lower sprocket on the differential to the middle sprocket on the front distributor;

15 a seventh chain connecting the top sprocket on the front transmission to the top sprocket on the front transmission distributor; and

an eight chain connecting the lower sprocket on the front transmission distributor to the lower sprocket on the front transmission.

20 15. A method of steering a camera dolly comprising the steps of:  
placing the dolly operators hands on a steering bar on the dolly;

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selecting conventional steering mode by turning the steering bar, with the operator's hands continuously remaining on the steering bar;

selecting crab steering mode by turning the steering bar, with the operator's hands continuously remaining on the steering bar; and

5 selecting round steering mode by turning the steering bar, with the operator's hands continuously remaining on the steering bar.

16. The method of claim 15 further comprising the step of moving sprockets on a differential apart as the camera dolly is shifted into conventional or round steering.

10 17. The method of claim 15 further comprising the step of moving active idlers while shifting steering modes to maintain tension on chains within the dolly.

15 18. The method of claim 16 further comprising the step of adjusting the amount of movement of the differential sprockets to compensate for a change in the dolly wheelbase/tread dimensions.

19. The method of claim 16 further comprising the step of locking the differential sprockets into fixed positions whenever the steering bar is not positioned at 0° or 180°.

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